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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/444,298	11/22/1999	MAMORU NISHIMURA	PM-265035	8478

7590

10/01/2002

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EXAMINER

RUDNICK, DOUGLAS W

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 10/01/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/444,298	<b>Applicant(s)</b> NISHIMURA ET AL.	
	<b>Examiner</b> Douglas W Rudnick	<b>Art Unit</b> 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 7-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 7-9, and 11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 7 states the average roughness of the surface of said partition walls being 95-80%. This is new matter because it is not disclosed anywhere in the specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 7-9, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 states two different measurements for the same value. Average roughness is said to be 1-5  $\mu\text{m}$ . and 95-80%. It is unclear what applicant is trying to claim.

5. Claim 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language of claims 10 and 11 are directed toward intended use. Intended use is of no patentable moments in apparatus claims.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 1, 3, 5, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi et al. (US 4849275) in view of Abe et al. (US 5680503) and Kotani et al. (US 5545243).

With respect to claims 1 and 7:

Hamaguchi et al. discloses the invention substantially as claimed.

Hamaguchi et al. discloses:

Partition walls (Col. 5, lines 7-10).

Said partition walls being made of cordierite in a honeycomb fashion (Col. 3, lines 21-24).

Pore volume of partition walls is at least 35-80% (Col. 3, lines 21-28).

A honeycomb structural body being a catalyst carrier (Abstract)

However, Hamaguchi et al. is silent to the cell density being at least 600 cells/in<sup>2</sup>. Abe et al. teaches a cell density of at least 600 cells/in<sup>2</sup> (Col. 8, lines 39-42) for the purpose of a more efficient catalytic monolith.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided a cell density of at least 600 cells/in<sup>2</sup> in Hamaguchi et al. in order to have a more efficient catalytic monolith as taught by Abe et al.

However, Hamaguchi et al. is silent to the catalyst being loaded on the surface of the partition walls. Abe et al. teaches the catalyst being loaded on the surface of the partition walls (Abstract) for the purpose of having a functional waste gas purifying device.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided the catalyst being loaded on the surface of the partition walls in Hamaguchi et al. in order to have a functional waste gas purifying device as taught by Abe et al.

However, Hamaguchi et al. is silent to the average roughness of the surface of the partition walls being 1-5  $\mu\text{m}$ . Kotani et al. teaches average roughness of the surface of the partition walls being 1-5  $\mu\text{m}$ . (Fig. 3 and Table 2) for the purpose of improving filtration properties.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided an average roughness of the surface of the partition walls being 1-5  $\mu\text{m}$ . in the modified apparatus of Hamaguchi et al. in order to improve filtration properties as taught by Kotani et al.

With respect to claims 3 and 8:

The modified apparatus of Hamaguchi et al., as applied to claims 1 and 7 above, discloses the invention substantially as claimed. However, the modified apparatus of Hamaguchi et al. is silent to partition walls with a thickness no greater than 80  $\mu\text{m}$ . Abe

et al. teaches partition walls with a thickness no greater than 80  $\mu\text{m}$ . (Col. 8, lines 39-40) for the purpose of more efficiently purifying harmful gas.

It would have been obvious to one of ordinary skill in the art at the time applicants' invention was made to have provided partition walls with a thickness no greater than 80  $\mu\text{m}$ . in the modified apparatus of Hamaguchi et al. in order to more efficiently purifying harmful gas as taught by Abe et al.

With respect to claims 5 and 9:

The modified apparatus of Hamaguchi et al., as applied to claims 1 and 7 above, discloses the invention substantially as claimed.

Hamaguchi et al. discloses:

Mean size of the fine pores in the partition walls is 1-10  $\mu\text{m}$ . (Col. 3, lines 28-30)

With respect to claims 10 and 11:

The modified apparatus of Hamaguchi et al., as applied to claims 1 and 7 above, discloses the invention substantially as claimed. Hamaguchi et al. discloses that the apparatus is used for an internal combustion engine (Col. 1, lines 6-15).

### ***Response to Arguments***

9. Applicant's arguments filed 8/19/02 have been fully considered but they are not persuasive.

10. Applicant points out that the Kotani et al. reference relates to a “very different device”. All of the references used ARE similar devices in the same art. Kotani et al. as well as the other references disclose cordierite honeycomb filters used for purifying exhaust gas.

11. Applicant points out that Kotani et al. discloses, “surface roughness is defined to improve the particulate trapping efficiency” and that applicants’ invention discloses average roughness as well as pore volume for the purpose of improving loading amount, which is a teaching far removed from Kotani et al.

Nowhere in Kotani et al. is surface roughness defined as applicant has pointed out above. Kotani et al. discloses that surface roughness and pores are a strong determining factor for operating time of the filter (Col. 6, lines 58-67). As stated above for applicants’ invention, average roughness as well as pore volume is for the purpose of improving loading amount. The reasoning for loading more catalyst on to a filter then in turn is for the filter to last longer and be more efficient, or in other words, to improve operating time and trapping efficiency, which is the motivation provided by Kotani et al. So the base motivations for having a sufficient average roughness in both Applicants’ invention as well as Kotani et al. are similar and not “far removed”.



***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W Rudnick whose telephone number is 703-305-3141. The examiner can normally be reached on M-F (8:30 am - 5:30 pm).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Douglas W. Rudnick  
Art Unit 1764

dwr  
September 24, 2002

  
MARIAN C. KNODE  
SUPERVISORY PATENT EXAMINER  
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